THE MODERN

PATHOLOGY AND TREATMENT

OF

VENEREAL DISEASES.

BY

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The following Summary of the progress made within the last thirty years in the Pathology and Treatment of Venereal Diseases originally appeared in the *Edinburgh Medical Journal* as a review of some of the best French and English works upon this subject.

I have reproduced it in this form for the use of those gentlemen who have done me the honour of attending my Lectures. At the same time, perhaps, it may prove not unacceptable to others whose limited time and opportunities have prevented them from fully investigating the subject.

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PART I.

ANDRAL long ago said that syphilis was so systematic, so symmetrical, that it may serve as a key to all pathology; and if pathology in general has made great advances in the last thirty years, no less has the pathology of venereal diseases made gigantic strides.

While it is a subject compact within itself, it has all grades of pathological processes connected with it. Though a specialism, it includes every organ, every tissue, in its comprehensive domain. If the knowledge of some diseases can only be acquired by the study of their literature, we have *the venereal* everywhere; for where do they not creep? They are rampant in our towns; we find them in every hamlet; the cottage no more than the palace is proof against them. Innocence and purity are tainted—nay, the marriage-bed is not exempted from the ravages of this foul plague.

These diseases, then, the curse and plague-spot of civilisation, have, for many an age, been the same as now we see them. There is certainly a period to which the origin of the venereal disease is referred; but any one who dips into the early literature of venereal diseases, that *mare magnum* of wildest superstition, will feel that he is instantly far beyond his depth, and will gladly retreat to the firm beach of his own observation to watch the tide-ripples which mark the course and progress of these maladies in the present day. The fact is, venereal diseases are probably the same now as ever!—only we know more about them now than formerly. They are no longer mysterious in their commencement, or various in their progress, and doubtful in their effects. The cloak with which shame, superstition, and ignorance had shrouded them has been torn away; and now we see them in all their nakedness—ghastly enough, no doubt, still obedient to laws as are other diseases, and hence subject to our professional rule, and more so, too, than most diseases with which we have to combat. What, then, was the condition of the pathology of venereal affections thirty years ago?

They owned one common source: *that* everybody acknowledged—they resulted from impure intercourse; but this common trunk bore various flowers, and still more varied fruits. There was gonorrhœa; and there were sores upon the genitals; and there were glandular en-

largements; and there were constitutional affections with cutaneous eruptions. Were these all the result of simple filth? were they the product of one common virus—the venereal? and were they capable of reproduction under a different form in another individual? or had they each a separate origin? All these questions were virtually unanswered thirty years ago. The views of the illustrious John Hunter were those principally received at that time; and in his work published in 1786 he most distinctly advocates the identity of the source of gonorrhœa, chancres, and lues venerea; while Fabre, Pressavain, Cullerier (senior), Capuron, Lagneau, Vigaroux, Gibert, and Devergie not only supported these views in the general, but adduced their large experience in proof of the justness of the dogma, that all venereal diseases were identical in their nature, the principle being the same in all, and the difference being only one of form, which they believed to be attributable to individual peculiarities, to the site, and to the greater or lesser intensity of the irritation produced by the action on the tissues of the body by the one common cause—the venereal virus.

No doubt there were dissentients to this doctrine in every age; and long even before John Hunter's day the non-identity of gonorrhœa and syphilis had been very distinctly indicated. John Hunter, in fact, alludes to this himself; and it would appear that it was to the Graduation Thesis of Dr Balfour upon this subject, published in 1767, that he pointed. But the doctrine received little or no countenance; and it was not until the year 1793 that we find any man of distinction giving his support to the doctrine of the non-identity of gonorrhœa and syphilis. In 1793 Benjamin Bell published his work upon venereal diseases; and in the preface to it we find him apologetically introducing his views upon the subject in these words:—"The opinion which I have ventured to support, of the difference between the matter of gonorrhœa and that of lues venerea, will no doubt be censured by many. They ought, however, to recollect, in matters of opinion which cannot be proved by demonstration, that some uncertainty must always take place; and, before censuring with severity the opinions which others may suggest, they should consider whether their own may not be equally liable to objection."[1] But Benjamin Bell did not rest satisfied by asserting, and endeavouring to prove by analogy and argument, that gonorrhœa could not produce chancres or a lues venerea; he also maintained that the pus from the surface of a chancre, or from a secondary eruption occupying a mucous or cutaneo-mucous surface, could not produce a gonorrhœa—that, in fact, a gonorrhœa, though a local, was a *specific* disease, and was only capable of production by means of its specific virus—the gonorrhœal virus.

Hence the terms Virulent and Simple Gonorrhœa, still so frequently employed both by patients and practitioners.

[1] *Treatise on Gonorrhœa Virulenta and Lues Venerea.* By Benjamin Bell. Vol. i., pp. ix. x., pp. 1–43.

In reviewing carefully, then, the state of opinion thirty years ago with reference to gonorrhœa and syphilis, it will be found that the facts adduced on both sides of this essential question, which formed the turning-point of all progress, tended to prove the following propositions:—

1*st*. That gonorrhœa was very much more common than chancres.

2*d*. That a purulent discharge from the urethra was sometimes, though rarely, followed by constitutional symptoms of syphilis.

3*d*. That the inoculation of purulent matter derived from the urethra sometimes, but rarely, produced chancres in the part inoculated.

4*th*. That irritants—chemical, mechanical and vital—sufficed to produce a discharge from the urethra.

Such facts, it must at once be obvious, left the whole question of the identity of gonorrhœa and chancres and syphilis quite undecided. The circumstances under which a discharge from the urethra was followed by constitutional syphilis, by suppurating buboes, by rheumatism, by swelled testis—and the connection between these morbid conditions, was quite undetermined; in other words, the commencement, progress, and termination of a case of gonorrhœa were altogether problematical. The prognosis was a matter of hap-hazard, and the treatment was purely empirical. Nay, the specificity of syphilis—its cause, its effects, its treatment—were all undetermined matters, in consequence of a scientific scepticism arising out of the too ready credulity and inaccurate and loose observation of preceding authorities.

In 1830, M. Ricord was appointed surgeon to the Southern Hospital of Paris, from which appointment, after thirty years of the most signal service to science and pathology, after making a reputation which is not only European but wide as the medical profession itself, he, in the zenith of his fame, in the height of his popularity, has retired to enjoy in the private practice of his profession that comparative repose which so long a period of hospital service, of onerous public duties as a teacher, and of zealous warfare in defence of his opinions and doctrines, was ill calculated to afford. Finding things, then, in this unsettled condition, M. Ricord set himself, by means of accurate experimentation, to study the cause of syphilis. The question he had to decide was, Had syphilis a special cause? was there a syphilitic virus? or did all venereal diseases originate from one common source?

Hunter had, long before, shown that the pus of a chancre, when introduced into the tissues of the body, reproduced a chancre. The observations of Bell and of Hernandez sufficiently confirmed that opinion. But then the counter-observations of Caron, Bru, Jourdan, Devergie, and Desruelles gave them a flat contradiction.

Where, then, was the source of fallacy? The use of the speculum showed that apparently simple purulent discharges from the vulva

were very frequently *accompanied* by chancres within the vagina, just as gonorrhœa preputialis is frequently dependent upon chancres concealed within the foreskin. The true source, then, of the purulent discharge, employed for purposes of experimental inoculation, required to be absolutely determined if the results were to be noted with anything like certainty as absolute facts. Every and any pus from the vulva or urethra, every and any pus from within the cavity of the phymosed prepuce, could not afford unexceptionable results, unless the existence or non-existence of chancres was absolutely determined by preliminary inspection.

A rigorous system of preliminary diagnosis, joined with an extensive employment of experimental inoculation, has, in the hands of Ricord, proved, with reference to gonorrhœa—1*st*, That muco-purulent matter, obtained from a non-ulcerated mucous surface, gives rise to negative results when introduced into the tissues of the surface by inoculation; and 2*d*, and conversely, when an *apparently* simple gonorrhœal discharge produces chancre by inoculation, it may be certainly predicated of such purulent discharge, that it has been obtained from a surface upon which a chancre exists.

The next question requiring solution was, Whether or not a gonorrhœal discharge required a specific virus for its production, as we have seen was maintained by Benjamin Bell? Investigation and observation have served to prove that any irritant which suffices to set up inflammation of any other mucous membrane is quite capable, when introduced into the urethra, of exciting a gonorrhœal discharge; that, in fact, any irritant, whether chemical, physical, or vital, is quite sufficient to give rise to a gonorrhœa, and that the majority of females who communicate a gonorrhœa do not suffer from it themselves.

Gonorrhœa, then, having no specific cause, has no specific progress. It has no period of *incubation*, properly so called, between the application of its cause and the commencement of the symptoms. A period of time certainly elapses, but it has no approach to being a *definite* one—it may be hours, it may be days. Accordingly, any deductions made as to the real source of the affection by the length of time which may have elapsed between various possible causes and the first appearance of the discharge, is likely to give rise to nothing but the most erroneous results, oftentimes affixing suspicions upon persons perfectly innocent.

Neither has gonorrhœa any specific site. The urethra is the most common site for a gonorrhœa the result of sexual intercourse in both sexes; but it is just as absurd to limit its site to the fossa navicularis in man, as Hunter did, as it is to attempt to make distinctions as to its being a true or spurious gonorrhœa in a female by the part of the glandular apparatus of the vulva which is principally and primarily affected. In both forms of specific venereal diseases we shall find corresponding glandular affections; but there is nothing specific, or even constant, in the bubo which sometimes

accompanies gonorrhœa ; it is a simple bubo of irritation. In the epididymitis which follows neglected cases of gonorrhœa, which some have thought indicative of the existence of a specific poison, we can see nothing but an illustration of the acknowledged law of extension of inflammation by continuity of tissue.

Then, again, the whole history of gonorrhœal ophthalmia, and of gonorrhœal rheumatism, tends to prove that there is nothing more specific in the former than in the inflammation of the urethra, which has produced the purulent discharge, which by direct contact has excited the conjunctival irritation. In the latter we only observe a tendency in certain irritations of the urethra of the male so to influence the sympathetic system as to disorder the functions of distant parts, and so produce what is called gonorrhœal rheumatism—an affection only met with in man, and never once observed in the female.

Cutaneous eruptions have, undoubtedly, often appeared after an attack of gonorrhœa, but they are no proof of a specific development of the disease. The fact that a man has once contracted a gonorrhœa does not, we presume, prevent the possibility of his having suffered from the indurated chancre which is the necessary preliminary of constitutional syphilis, any more than it precludes the possibility of a *resinous* eruption being mistaken for a secondary syphilitic exanthema by those who are not too well acquainted with the appearances and characters of either.

There is nothing, then, in all this to give even a shadow of probability to the existence of any gonorrhœal virus, any more than there is to the identity of gonorrhœa and syphilis.

But perhaps it may be urged that there are undoubted cases in which a purulent discharge from the urethra has been followed by most indubitable symptoms of constitutional syphilis. We admit it ; but at the same time we have no hesitation in asserting, that the number of cases in which patients attribute an eruption characteristic of secondary syphilis to an attack of gonorrhœa are infinitely more numerous still. Such facts seem at first sight to overthrow the doctrine which we have just attempted to propound ; but more accurate observation shows that in all such cases a chancre has existed, which has been the undoubted source of the constitutional affection. This chancre may either have been concealed within the urethra, and been the source of the purulent discharge ; or the chancre situated on the penis has coexisted with the gonorrhœa, and escaped observation from the comparatively small degree of uneasiness which it has produced ; or the chancre has existed upon some other part of the surface, and has eluded observation. Such chancres situated on the finger, within the anus, upon the hairy scalp, among a thick bush of whiskers, within the cavity of the mouth, or in other unusual and unlikely and often carefully concealed sites, may very naturally be overlooked by any one not alive to the doctrine of the inevitable connection of syphilis with the indurated chancre.

The conclusion, then, to which we must come is, that the great majority of cases of gonorrhœa are simple or benign, but that virulent purulent discharges do sometimes occur from the urethra. These, however, invariably depend upon chancres within the canal, and not upon any specific *gonorrhœal* virus. Such being the case, can we in any way decide beforehand, with anything like precision, upon the nature of a case of gonorrhœa, as to its *simplicity* or its *virulence*, as to whether there is simple inflammation of the mucous surface, or a specific ulcer situated upon that surface? The source of the infection, as determined by the presumption of comparative chastity, as we have already indicated, must go for nothing in any rigid examination of this question; for the chastity of any female who is unchaste in one instance may very justly be called in question in all. Nay, even when the female herself is found free from all disease, the experiments of M. Cullerier at the Lourcine sufficiently attest that she may serve as the temporary receptacle of the specific chancrous virus. Receiving it from one individual, though unaffected herself, she may hand it on to the next.

Some have laid much stress upon the period of so-called incubation of a gonorrhœa as a means of diagnosis. There cannot be a doubt certainly, as we shall have occasion to mention afterwards, that a comparatively long period may exist between the inoculation with the virus of an indurated chancre and the appearance of the characteristic sore; but as this is not the case with the soft chancre, such a means of differential diagnosis cannot enable us certainly to decide the non-existence of urethral chancres. As little does the *violence* of the symptoms serve as a sure indication of the *virulence* of a gonorrhœa; for, as a general rule, the urethral discharge which is attended by least pain and least purulent matter, is most likely to be produced by an indurated chancre, and therefore followed by constitutional syphilis.

There are symptoms, however, which, when duly appreciated, constitute a very valuable means of arriving at something like certainty with regard to the existence of urethral chancre. The first of these is, that the discharge usually consists of a sero-sanguinolent pus, with but little mucus, therefore usually scanty. The mere admixture of blood, however, in the discharge, is not of itself a sufficient indication to rely upon; for, in simple gonorrhœa, the rough use of instruments—such as syringes for injection, or bougies—the employment of irritating lotions, the presence of chordee or persistent erections, may give rise to this symptom without the existence of any chancre of the canal. The second is, that the pus, when inoculated, gives rise to a chancre. This, of course, is most positive evidence; and were it justifiable to practise inoculation in another individual who has never suffered from constitutional syphilis, or were chancres in all stages of their progress equally capable of inoculation, it would be absolute in all; but, unfortunately, the chancre with an indurated base is not capable

of reproduction, as such, in the individual who has already suffered from it, and all chancres lose in time their specific characters. How, then, can we determine upon the existence of an indurated chancre of the urethra which is the certain antecedent of constitutional syphilis?—for this is the result which all authors who have entered upon this subject have sought most to arrive at. We have that power in some degree; for, certainly, the feeling of an *indurated* point in the course of the urethra, to which the patient refers all his symptoms, when markedly present, is very characteristic, but it must be carefully distinguished from the enlargement consequent upon suppuration within the cavity of one of the follicles opening into the lacuna; and when this induration is associated with the multiple bubo, symptomatic of the indurated chancre, our diagnosis may safely be decisive of the certainty of an outbreak of secondary syphilis within a limited period, the case being one, not of gonorrhœa, but of concealed urethral indurated chancre.

Turning now from these results of pathological inquiry, let us look, in passing, at the most approved methods of treating gonorrhœa. The affection is non-specific; therefore mercurial treatment is quite unnecessary for the cure of either the inflammation of the mucous surface or of any of its results.

Some sure method of prevention, by which the practitioner may pander to the vicious desires of those who would avoid the consequences of their own temerity, although often enough spoken of, does not exist. M. Diday, to be sure, has expended much ingenuity in the invention of a syringe for urethral injection, with a piston and handle closing down like the blade of a clasp-knife, suitable for the waistcoat, and designed to be a constant pocket companion, always ready in time of need. All such measures, fitted to create a feeling of false security in the minds of those whose fear of consequences might have compelled them to put a bridle on their passions, will be found by them, when too late, nothing but a delusion and a snare.

Some years ago, the so-called *abortive* plan of treatment of a gonorrhœa had its share of professional confidence. A solution of nitrate of silver, of the strength of ten grains of the salt to the ounce of fluid, was injected into the anterior part of the canal, with the supposed effect of destroying the cause of the disease, of cutting short commencing inflammation, and substituting in its place an inflammatory affection which runs its course more quickly and with less irritation. Experience has, however, proved that in the male subject, when employed after the characteristic gonorrhœal discharge has been established, its use is not unattended with serious risks, such as ulceration of the canal, perineal abscess, and inflammation of the prostate and bladder; and that, when employed before the discharge has made its appearance, its use was always open to the objection that, very possibly, we were inducing an actual inflammation for one which we had anticipated on no better ground than mere suspi-

cion. At this early period of the attack, by rest and by avoiding every cause of local and general excitement, by the use of cooling drinks and diluents, starvation, and cold or warm applications, as the sensations of the patient indicate to be best, by being most grateful, much may be done to mitigate or even prevent the acute acme of the inflammation.

When, however, acute symptoms occur, blood-letting need never be had recourse to, and leeching is scarcely ever required. Rest, diluents, laxatives, diuretics, mucilaginous drinks, the hip-bath, fomentations, and the milder antiphlogistic remedies, with opiates if necessary, are all that modern experience can recommend. And then comes the time for the exhibition of those so-called specific remedies, Copaiva and Cubebs. Dirty, nauseous, permeating drugs though they be, nothing can equal them in the certainty and efficacy of their action; given together as an electuary, and taken after meals in rice paper to cloak the nauseating flavour, they are far more effectual than in soapy emulsions or sophisticated capsules. Their mode of action is a demonstration of recent date. It is not from any influence which they exert upon the system at large, or by promoting the excretion of any poisonous material from the blood, that they do good; for gonorrhœa is a purely local disease, and can only be directly benefited by local treatment. But these remedies, having been absorbed into the system from the alimentary canal, have their active principles again excreted with the urine, giving it a violaceous odour; and that fluid, impregnated with them, must, of course, come to act directly upon the inflamed surface as it is voided by the urethra. Hence it is, as experience long ago proved, that these remedies have no effect whatever in vaginal gonorrhœa or in purulent ophthalmia, or, in fact, in any suppurative inflammation of a mucous surface to which the urine is not applied. This has had ample proof in cases of gonorrhœa occurring in patients affected with partial hypospadias, when the urine, impregnated with the principles of the copaiva and cubebs, could be made to pass along the affected portion of the canal, or not, according to the will of the patient. Two such cases are detailed by M. Ricord, and carry conviction in their relation. But, while we must admit the powerful remedial effects of these so-called specifics, it must not be forgotten that sickness, vomiting, jaundice, acute resinous exanthemata may be produced, and are frequently produced, by the prolonged use or too free administration of copaiva; and that both copaiva and cubebs, when pushed in large doses, have been known to produce alarming cerebral disturbance. Such facts have induced some theoretically to recommend the direct application of the copaiva to the urethra itself in the form of an injection, so that, while its action on the part is secured, the system may be left unaffected; but experience proves that the same good effects do not accrue as from that remedy when filtered through the emunctories. Velpeau, again, has recommended copaiva enemata; but these,

though at one time in vogue, are found so dirty, irritating, and inconvenient in their administration, and so uncertain in their effects, that they may be said to be effete.

With the use of these remedies, the good to be obtained from astringent injections must not be overlooked. Gonorrhœa, as we have seen, is a purely local disease, requiring nothing but local treatment; and, as soon as the acute irritability of the urethra will bear the use of astringents, there should be no delay in resorting to their employment. Largely diluted at first, but gradually increased in strength as the diminution of the irritability may indicate; always remembering that there is a point at which the astringent ceases to act beneficially, and commences to produce an irritant effect,—then, of course, requiring that dilution of the remedy, or a few days' intermission of the injection, should be recommended. Those salts which act purely as astringents are recommended by some; while, by others, solutions containing an impalpable powder in suspension are preferred—the latter substance being presumed to act by coating the opposed mucous surfaces, and thus preventing their immediate contact. This theoretical explanation of their action is certainly borne out by the undoubted fact, that the mechanical method of treating vaginal gonorrhœa by the maintenance of a very slight degree of actual separation of the mucous walls of that canal, by means of dry lint or dusting powder, has been found, without any further measures, to effect a complete and speedy arrest of the inflammatory secretion.

It is well known that gonorrhœal epididymitis is attributed by most patients, and by many practitioners, to the employment of injections; and, no doubt, if strong irritating injections are employed indiscriminately in the treatment of gonorrhœa, such a result may very reasonably be supposed to result from such temerity. When, however, the true pathology of epididymitis, as a sequela of gonorrhœa, is understood, it will at once be granted that, so far from exciting swelled testis, the judicious employment of injections is really calculated to prevent such a calamity. In such cases, it is well known that with the inflammation of the epididymis the discharge from the urethra is usually, for the time, either arrested or checked; and this coincidence is usually quoted as an example of that anomalous mode of extension of an existing inflammation which is called metastasis. Now, morbid anatomy has shown that, in the case of the epididymis and urethra, the extension is simply effected by the gradual progression of the inflammation along the urethra, and its extension by continuity of texture to the vesiculæ and vas deferens, usually upon the left side. Hence, if by neglect of a gonorrhœa the inflammation is given time to creep backwards, the affection of the testis may be expected as a natural result; and, accordingly, the period at which we most commonly meet with this complication is from a fortnight to a month from the commencement of the discharge. It seems, therefore, inevitably the conclusion, that

if we can cure a gonorrhœa before it has had time to reach the membranous portion of the urethra, we will secure our patient from all risks of swelled testis, instead of inducing it, as has been feared, by too rapidly arresting the discharge. So true is it that a gonorrhœa allowed to follow its own course is the surest cause of epididymitis, that a burlesque of statistics has been adduced by M. Ricord, to the effect that the most common cause of swelled testis during gonorrhœa is the free administration of lintseed tea. "I have in my possession," says he, "in proof of this point, several elaborate tables of statistics; and the pupils who attend my clinical lectures await with a smile my final query, addressed to every patient affected with epididymitis, 'But haven't you taken lintseed tea?' to which the answer 'Yes' is inevitably returned." The natural conclusion from such statistics and such facts must certainly be, that epididymitis, like the other complications of gonorrhœa, is in no way dependent upon a revulsion, or metastasis, or any other chimerical morbid process, by which some would attempt to intimidate us in the use of means calculated to effect a speedy cure, but is produced by the continuance and extension of the suppurative inflammation; and, therefore, that the use of any means calculated to cure the discharge is the surest way to protect the patient from all risk of the occurrence of any of those disagreeable consequences.

Stricture of the urethra, it is well known, has also very frequently been referred to a similar source; but now-a-days we are wont to regard stricture rather as a consequence of a gonorrhœa allowed to run on, thus keeping up congestion of the mucous membrane and submucous tissue of the urethra, than to suppose that, by checking such pathological processes, we produce structural changes. In fact, whenever a surgeon finds a urethral discharge becoming chronic, it is a rule to examine the condition of the urethra by passing a bougie, so as to satisfy himself that such structural changes have not occurred; and, should they even not be present, the occasional passage of a bougie will be found the most certain means of preventing their formation and arresting the morbid secretion.

In spite, however, of all such treatment, a gleety discharge sometimes still continues—checked, no doubt, so long as injections are employed, but recurring again as soon as they are given up. In such cases the part affected seems to be the membranous portion of the urethra and prostate; and as no injection thrown along the canal can permeate farther than the bulb, if local applications are deemed requisite, some means must be adopted to secure the injection or astringent application acting beyond the barrier. This may easily be effected by means either of Lallemand's porte caustique, or by a catheter introduced as far as the prostate, and the injection practised through it as the instrument is withdrawn. In this way the discharge from the posterior part of the canal having been checked, the spongy part of the canal will be no longer contaminated from

behind, and the discharge from it will now be found to yield permanently to the use of ordinary injections.

In treating the gonorrhœal swelled testis, there are three indications which it is important to attend to:—1*st*, To check the inflammatory symptoms. For this purpose, leeching or scarification of the scrotum, thus opening several veins, followed by hot opiate fomentations, will be found more agreeable to the sensations of the patient than resorting to the very doubtful measure of employing graduated compression of the inflaming organ, by means of adhesive strapping or collodion, from the very outset —a practice which, in even the skilful hands of Ricord, has resulted at times in sloughing of the testicle. When, however, the acute symptoms have been checked, then graduated compression will be found most satisfactorily to fulfil the 2*d* indication, viz., to support the congested and swollen part; while, 3*dly*, no time should be lost in employing appropriate remedies to arrest the gonorrhœal discharge. This may at first sight appear a mistaken practice; for it is generally the case that, as the testicle becomes inflamed, the gonorrhœal discharge is either checked or arrested, and, as the inflammation subsides, the discharge recurs, which might seem to indicate the propriety of using measures rather to encourage than repress the discharge. In fact, so strong a hold had this principle, of soliciting the reappearance of the discharge, taken of the minds of surgeons, that even to the present day some really do employ measures calculated to reproduce the discharge, such as introducing bougies coated with irritating substances. And it is no long period since a distinguished surgeon in a metropolitan hospital used to excite the risible faculties of his pupils, at the expense of any unfortunate suffering from swelled testis, by asking how the swelling came on; and when told by the patient that, as the swelling appeared, a "running" ceased, taking a sixpence from his pocket, he would say, "Well, my good fellow, here's sixpence to get another with." So much for the old pathology of a metastasis and its practical results. Now-a-days we believe that, as long as any discharge continues to come from the urethra, the patient is not free from the risk of the re-excitement of the epididymitis. Accordingly, the question is not, should the discharge be stopped, but, when this may be done with best success; and the answer to this must simply depend upon the period at which a patient suffering from acute swelled testis will bear the administration of cubebs and copaiva. Whenever his stomach will bear them, he should begin to take them. The urine soon becomes impregnated with them, and the irritation of the posterior part of the urethra is in most cases very speedily allayed, and with it the tendency to maintenance of the inflammation of the testicle. In other cases, again, where there is a sort of chronic tendency to the re-excitement of irritability and swelling of the epididymis, or when the globus major and cord remain thickened and tender, giving rise to most distressing neuralgic

uneasiness, then the use of bougies, or even of the porte caustique, or injections of the deep part of the urethra, and the external application to the scrotum of solution of nitrate of silver, with attention to the condition of the general health, will usually effect a marked change for the better.

Although the existence of gonorrhœal rheumatism is pretty generally admitted in this country, from the notice taken of it by Sir Benjamin Brodie in his work upon the Joints, some doubt appears to exist in the mind of several eminent writers upon the Continent as to the connection between gonorrhœa and certain forms of rheumatic ophthalmia and articular affections. The most important and recent memoir, in which it is attempted to prove that there is no such thing as gonorrhœal rheumatism, is written by Professor Thiry, of Brussels; but as M. Rollet's more recent researches upon this subject constitute a most thorough refutation of the Professor's views, it is quite unnecessary to do more than, in a few words, to indicate the prominent facts adduced by M. Rollet with reference to this disease.

Several cases are narrated by him, in which repeated attacks of gonorrhœa are followed by corresponding rheumatic seizures; others, in which the same gonorrhœa, incompletely cured, is reproduced, and with each recrudescence of the gonorrhœal discharge a corresponding attack of recurrent rheumatism. In all such cases it is the rule that, so far from the discharge ceasing or becoming diminished with the development of the rheumatic seizure, it is rendered more abundant during its existence; thus completely upsetting the idea of anything like a true metastasis. He further adduces proofs of the existence of a gonorrhœal rheumatic iritis, which sometimes is substituted, at other times alternates with the articular disease, and the peculiarity of which appears to consist in the membrane of the aqueous humour being the texture principally implicated; thus making it in every respect the analogue of the affection of the articulations in which the synovial membrane is the part principally affected, and distinguishing it from the more common forms of simple or specific iritis, in which the substance of the iris is always primarily involved. In the gonorrhœal rheumatic affection, furthermore, the exudation is characteristically copious, as was long ago pointed out by Mackenzie; but, however copious, the prognosis may always be favourable, as, under ordinary sorbefacient treatment, the flocculent lymph is rapidly removed, and vision becomes restored.

Although the knee-joint is the articulation most frequently attacked, any joint in the body may be affected; and even the pericardium, the meninges of the brain, and other fibrous tissues, have been observed to suffer. Curiously enough, this disease has never been met with in the female sex.

This immunity of the female sex from gonorrhœal rheumatism certainly constitutes a well-marked difference between the common idiopathic rheumatism and the gonorrhœal rheumatic affections; and, in fact, so unconnected are they, that the existence of a well-

marked rheumatic diathesis, or even previous attacks of a rheumatic kind, in an individual, appears to have no influence in determining the occurrence of rheumatic affections during the existence of a gonorrhœa. Exposure to cold or damp, the season of the year, particular occupations, constitution, temperament, age, habits,—none of these common causes of predisposition appear to exercise any influence in determining the development of this anomalous disease.

The only constant circumstance in these cases is the existence of a urethral discharge; and to this, apparently, must be attributed the excitation of the rheumatic affections. To explain the connection between this cause and its effects, two hypotheses have been proposed. The first presumes that absorption of some material from the purulent secretion takes place, and evolves itself elsewhere in the form of rheumatism. Those who hold this theory have generally described the gonorrhœa as becoming more or less checked when the rheumatism is set up—a statement which is, however, known not to hold good in almost any case; and the theory to which it would serve as a very efficient proof, has really no foundation whatever on facts or analogies. The second hypothesis would attribute to the inflammatory affection of some part of the urethra from which this copious discharge comes, a power so to influence the sympathetic system as, by reflexion, to produce the local affection of the joints; and with this hypothesis we find certain analogies coupled, such as the intermittent form of febrile excitement produced in some by the passage of a bougie, or the actual effusions into the joints, accompanied by rheumatic pains, which sometimes arise in the progress of a case of stricture of the urethra when too frequent or indiscriminate instrumentation has been had recourse to. What part of the urethra it is that resents irritation in this way, has not been particularized. Some have referred it to the bulb, some to the membranous portion, others to the prostatic part of the canal. Whatever part or parts of the urethra may possess this peripheral influence upon the sympathetic in the case of a gonorrhœa, certain it is that an instrument passed into the bladder, and retained there, in a case of stricture, is more liable to excite rigors followed by febrile reaction when fairly conveyed into the bladder, than when merely lodged with the extremity in the membranous part; and those practical surgeons who are in the habit of retaining the instrument for a time in the treatment of stricture of the urethra, usually recommend that the bougie should merely be passed through the stricture, and not lodged in the bladder.

The rheumatic affection, then, being dependent upon the gonorrhœal inflammation for its commencement and its maintenance, so far from desiring to increase this discharge, as was the practice among the older surgeons, our object must be to arrest it as speedily as possible; for, cure the rheumatism as we may, so long as the urethritis continues, it is almost certain to relapse, and an exacerbation of the urethritis is certain to excite a fresh attack of the syno-

vial inflammation. Repose, leeching if required, fomentations, the vapour bath, and blistering, followed by pressure applied to the joint, are the local measures usually resorted to in such cases, and generally they are found to be attended with the best results. The acetate of potash, with colchicum and hydriodate of potash, have been recommended by some writers; but experience proves them to be of comparatively little benefit when compared with their excellent effect in cases of idiopathic rheumatism. Should the thickening of the synovial membrane threaten to become persistent, then, instead of repeated blistering, the Emp. Gummos. c. Hydrarg., or Emplatre de Vigo of the Parisian Codex, will be found, when combined with pressure, to be very beneficial.

It is seldom necessary to resort to the internal administration of mercurial remedies for the articular affections. When iritis, however, exists, then no other remedy produces such speedy and well-marked effects in promoting absorption of the exudation and restoration of vision. In such cases, paracentesis of the aqueous humour, the use of belladonna, and the repeated application of blisters, will be found especially useful where the tension of the globe is considerable, and pain is a well-marked symptom.

In the treatment of purulent gonorrhœal ophthalmia, depletory measures are found to be not only useless, but absolutely injurious. The days are past when, in gonorrhœal ophthalmia, a surgeon would recommend that "as much blood should be taken from the arm as will flow from the vein, and the evacuation should be repeated as soon as the state of the circulation will enable us to get more." And, assuredly, we have better results now-a-days than those related by a distinguished surgeon, who says that "the only case he had seen in which the eye was saved, was that of a young woman in whom venesection was repeated as often as blood could be got from the arm. She lost 170 ounces in a few days, and looked as if every drop of blood had been drained from her body, the skin being nearly the hue of a wax candle." While the experience of modern ophthalmic surgery has certainly no equal to that which induced an Irish surgeon to say, "These are cases which defy all the usual etiquette of regular and ceremonious visits. If we wish to save our patient from the destruction of his vision, we must scarcely depart from his bedside until the inflammatory symptoms are controlled. The lancet must be hardly ever out of our reach; for if ever there was a disease in which blood must be taken away without limitation, it is this." This inflammatory affection, like that of the urethra, is a purely local one, and is in great measure maintained and increased by the presence of the purulent discharge confined within the lids acting as an irritant to the whole conjunctival and corneal surface. The old notion, that such purulent inflammations might be other than the result of the direct application of the gonorrhœal secretion, either of the same or of another individual, to the surface of the conjunctiva, is now completely exploded; at all events, in the minds

and works of those practitioners who, with large opportunities, rely upon their own experience for facts, instead of taking for truths the observations of the older surgeons, whose minds were biassed by theoretical speculations which no one is now-a-days inclined to accept. Accordingly, the indications to be attended to are,—1*st*, to maintain cleanliness; 2*d*, to apply astringents to the inflaming and inflamed conjunctiva; 3*d*, to soothe pain; and, 4*th*, to relieve tension. These indications are carried out in practice by pencilling the solid nitrate of silver over the tarsal conjunctiva, or by applying either a solution of the salt, or Mr Guthrie's ointment, within the lids till the surface is whitened, and repeating it as frequently as the renewed increase of the discharge, and the reappearance of the red velvety surface of the conjunctiva, indicate the necessity of its re-application. Cleanliness is maintained by frequent bathing of the eye, and by syringing beneath the lids with a slightly astringent lotion, which should contain either belladonna or opium, to soothe the pain; and when the chemosis is great, and the overlapping membrane hides a circularly ulcerating cornea, then not only scarifications in the conjunctival membrane, but puncturing of the cornea and the evacuation of the aqueous humour, will be found attended by a marked relief to tension, and will for the time allay the injurious friction of the tarsal conjunctiva against the cornea, which threatened to slough had matters continued much longer unrelieved.

Gonorrhœa in the female, in its early stage, may be checked, when the vagina and vulva are alone affected, by the free application of the solid nitrate of silver to the surfaces; and if there is any pain in micturition and redness of the urethral orifice, a similar application to that canal, by means of a short porte caustique, will be found to arrest the further progress of the attack. When, however, acute symptoms have fairly set in, and such manipulations would give rise to intolerable pain, then rest in bed, warm bathing, the application of a solution of acetate of lead and opium between the folds of the labia, and similar injections up the vagina as soon as they can be borne, will pave the way for our resorting to more effectual measures; of which, astringent injections, such as alum and oak bark, the introduction of strips of lint up the vagina, and injection of the urethra by means of weak solutions of nitrate of silver, will be found attended by better success and less discomfort to the patient than any other method of treatment.

PART II.

The specific venereal diseases which we have now to consider have very commonly been included under the name of Syphilis. This name has been derived by Fracastor, in his very elegant poem upon this somewhat inelegant subject, from a fictitious hero, Syphilus, who, in an evil hour, having insulted Apollo, brought upon the human race this malady as a fearful penalty for his temerity.[1] A more rational derivation of the word, from either *συν-φιλια*, mutual love, or *συς-φιλια*, piggish or impure love, naturally suggests itself, and obviously indicates that the term must originally have been designed to include all diseases which we now style venereal, that is to say, resulting from impure sexual intercourse.

Those of them, however, to a consideration of which we devoted the first part of this review, had, as we then saw, no specific definite origin, and no specific results. Although they were communicable, they were so simply because they afforded irritating secretions. But those which remain to be considered have undoubtedly a specific origin and a specific transmission. The term syphilitic has, therefore, in the language of modern pathology, been reserved for those venereal diseases which follow this undoubted specific course. But a still more rigid inquiry into the specifically communicable and the consecutive affections has separated them into primary affections or sores, which are commonly called chancres, and a constitutional infection to which the term syphilis is usually restricted.

This constitutional disease called syphilis, as we now-a-days meet with it, is in every case dependent upon the action upon the tissues of the body of a specific morbid poison, which Ricord first designated with any definite significance, "*The Syphilitic Virus.*"

There was a time, however, not far distant, when many esteemed pathologists would not have patiently listened to the employment of the word virus to describe the evolution of syphilis. To such days belongs the tragic indignation of the learned and eloquent Jourdan, who, in repelling the arguments of Ricord in support of this doctrine, insisted, in the Academy of Surgery, that, call it what he would, he should not degrade the term virus by applying it to such a disease.

[1] "*Syphilidemque, ab eo, labem dixêre coloni.*"

But, while the onward wave of pathological knowledge has, to our mind, left the statement of Ricord established upon a basis more firm and sure than ever, and swept away all arguments and facts which seemed insuperably to oppose it, still, if our readers will bear with us for a moment while we compare the rigid signification of the term, "virus," with the condition of the pathology of syphilis at the period to which we have just alluded, we think it will become apparent that Ricord asked too much when he insisted upon the recognition of a syphilitic virus as a logical deduction from the facts as then observed.

A specific virus, in strict pathological language, is a something which of its own virtue, when introduced into the tissues of the body, infects the whole organism, and is reproduced at the part into which it was introduced in the form of purulent matter—the product of the specific inflammation, which is capable of reproducing itself under similar circumstances *ad infinitum*.

Those who regarded gonorrhœa, warts, etc., as evolutions of a protean disease, which they called syphilis, and which they believed originated in the great common venereal virus, could not be expected, of course, to see in them anything so constant as to enable them rationally to include them in the limits of such a rigid formulary as we have just enunciated.

But, rejecting all the simple results of local irritation from the category of specific affections, for reasons for which we think we have already shown sufficient cause in the former part of this article, we would now attempt to face the question, Are all the inoculable affections of the genital organs really syphilitic? In other words, and more plainly, Is every sore upon the genital organs, which furnishes an inoculable pus, a source of the syphilitic virus? For, observe, such was the doctrine of Ricord, as enunciated 30 years ago; such was the pathological truth which he thought he had led captive to the point of his lancet; such was what he believed he had proved, but of which Jourdan so indignantly repudiated the demonstration.

To arrive at any conclusion upon this subject, we must consider the data from which he made this large generalization; and, without entering minutely into the very experiments and observations upon which the conclusions were based, we will consider the subject in the following order:—1*st*. The Source of the Virus, and its Condition. 2*d*. The Part and Person into whom it is introduced. 3*d*. The Effects it produces in the part. 4*th*. The Effects which follow in the system. And, to avoid confusion, and preserve an historical sequence, we shall examine these particulars only by the light afforded by the clinical observations of Ricord up to the year 1834.

(1*st*.) *The Source of the Virus.*

We have already had occasion to see how the purulent matter derived from gonorrhœa cannot produce chancres when applied to

a solution of continuity of the surface; and, conversely, that whenever the matter from an unexplored mucous surface, such as the urethra or vagina, produces a chancre by inoculation, we may rest confident that a chancre exists somewhere upon that surface. While, then, a chancre is the only possible source of a purulent secretion capable of giving rise to a chancre upon inoculation, if we take inoculation as an absolute test of specificity, and find that the pus of a chancre will not under all circumstances produce positive results, it follows that there are circumstances which prevent a chancre which was inoculable one day from furnishing an inoculable secretion the next. What, then, are these circumstances? Can we, for example, from the appearance of the purulent secretion, decide as to what the result will be? In reply to this, some surgeons have attempted to indicate certain characters which they believe distinguish the specific pus. Such characters, however, belong to the pus, and not to that which constitutes the essential potency of the pus, and which apparently eludes our best efforts to characterize its presence. We know, however, that it is absent when putrefaction has commenced, or when cicatrization of the sore is in progress. But the chancre poison, when potent, can be preserved in an active condition for any length of time, just as we preserve vaccine lymph, and therefore needs no physiological act upon the part of the organism which furnishes the secretion to make it effectual. The constant source, then, of the chancrous poison is a chancre yielding pus—the sore not cicatrizing, the pus not putrescent.

(2*d.*) *The Part and Person into whom the Chancrous Poison is introduced.*—Have they any effect upon the action of the poison? Ricord, in reply, showed that, if the poison from a chancre fulfilled the indications we have already stated, its introduction into any part or any individual, provided only there be a slight solution of continuity of the shielding cuticle, specific effects will ensue.

(3*d.*) *These effects in the part are,*—1*st*, A pustule, which forms a sore; or, 2*d*, An open sore. In either case, the characteristic of the sore being, its tendency to extend its limits, or to be tardy in cicatrizing. But this sore, so produced, Has it the characters of the parent sore? Now, in 1834, and even at a very much later period, the only reply which could be given to this was, that the sore might present various aspects. These differences, it was presumed, depended, not upon the poison, but upon the state of the constitution of the individual who had been inoculated with the chancrous matter; and it was further remarked, that these different appearances seemed to bear some unknown relation to certain after effects.

(4*th.*) *These effects which follow in the system* the experience of all ages has shown to be more various in appearance than even the sores themselves. In some cases, for instance, the sore is the whole affair; in others, a swelling in a neighbouring lymphatic gland makes its appearance, resists all treatment, and inevitably terminates in sup-

puration ; in others, a glandular enlargement occurs in the neighbouring lymphatic chain, giving rise to no uneasy symptom, but remaining very persistently. In some cases no constitutional symptoms occur ; in others, a mild series of cutaneous affections follow ; while in others the constitutional symptoms are both severe, protracted, and intractable. Now, if all these affections are really one and the same, they certainly constitute a most incongruous medley —a confusion of results, as originating from a single cause, enough to confound any ordinary mind, and to bring order out of which were a task worthy of Hercules himself. Such was the unsatisfactory condition of the results of M. Ricord's observations at the time alluded to, when he first attempted to prove the existence of a syphilitic virus.

One seed (to employ his own simile)—the syphilitic virus ; various plants—the different forms of sore ; and still more various fruits—the uncertain consecutive results. Such was all he could adduce in proof of its existence. If this were consistent with his idea of a specific virus at that period, sure we are that it does not fulfil the requirements of the formulary we commenced by enunciating ; nor, indeed, would it tally with what would be demanded by Ricord himself at the present day. The doctrine of a single virus, which produced such various, nay, dissimilar results, quite inexplicable by any known pathological laws, was only calculated to engender a sense of uncertainty in prognosis, and a want of confidence in the employment of treatment. We need not wonder, then, that practitioners, who daily studied facts as well as doctrines, should come to the conclusion, as such a doctrine failed to explain a majority of the facts which came under their observation, that it was far better to reject it altogether, and fall back upon the glorious doctrine of uncertainties on which medicine has been built from the earliest times.

What, then, had Ricord really proved when he thought that he had demonstrated the existence of a real veritable virus ? Simply that, apart from gonorrhœa and non-specific affections yielding a purulent secretion, there were sores, usually called *chancres*, which afford a secretion capable of reproducing similar sores upon inoculation ; and that, while some of these are followed by constitutional symptoms indicating an empoisonment of the system, others—and these are the majority—are followed by no result whatever. It is true that by many this immunity from constitutional infection was attributed to the employment of timeous treatment ; while, again, by others the existence of all such symptoms was held to prove that a poisonous use of mercurials had been had recourse to, and to which, accordingly, the so-called constitutional manifestations of syphilis were referable. Ample experience, however, in the expectant plan of treatment, once in vogue both in Edinburgh and upon the Continent, has sufficed to prove to the satisfaction of the most sceptical that constitutional syphilis will and does occur in a certain

number of cases where no mercury or anything else has been given; while, again, the employment of the most active treatment, whether of the sore or directed to the condition of the constitution, has not been found to diminish the proportion of cases in which constitutional syphilis follows the occurrence of chancres. It became obvious, then, to all attentive observers, that though every chancre might reproduce a chancre, every chancre was not necessarily followed by constitutional syphilis. It was clear that, while some chancres existed only as such, and produced no more than local effects, and while some irradiated their influences no further than the first lymphatic gland in the neighbouring chain, there were others which were followed, after the lapse of some weeks or months, by a series of constitutional symptoms, which invaded in turn the different systems of the body, commencing with the skin and mucous membranes, and terminating with the cellular tissue, bones, and viscera.

It was clear, then, if all chancres were to be held as alike capable of infecting the system, and if treatment could neither be accused of inducing nor depended upon for preventing the constitutional affection, that these dissimilar results, to be rationally explained, could alone be attributed to some difference in the constitution, temperament, sex, or idiosyncrasy of the individual in whom they occurred. And the lymphatic temperament, the scrofulous diathesis, and irregular habits were presumed by some to explain the constitutional evolution of the disease, much in the same way that a debilitated state of the constitution obviously favoured the occurrence of phagedenic ulceration in the chancres themselves. According to this view, the chancre poison resembled a seed which produced different plants and various fruits, according to the soil in which it was planted. In practice, such a generalization was not found to add much to the certainty of our prognosis, for while it implied that every chancre might induce syphilis, the manner how, the time when, and the reason why, such an infection should occur in one case as compared with another, was left absolutely indefinite. One thing, however, remained certain, that in the great majority of cases no constitutional symptoms were to be apprehended. We believe, then, that while M. Ricord, with any or all of these ingenious speculations, failed in his proof of the existence of a *syphilitic virus*—possessed of a specific commencement, a specific transmission, and a specific evolution in the form of an inevitable diathesis—he had proved most completely a minor proposition, viz., that in the chancre there was a specific virus capable of reproducing itself; that in the chancre, and its transmission from individual to individual, there was a distinct revolution of cause and effect alternately; while he indicated the existence of another circle beyond this, consisting of certain consecutive or constitutional effects, which, although obviously revolving around the same centre, he failed definitely to

connect with those revolving within. He certainly seemed to show that there was no syphilitic infection of the system without the pre-existence of a chancre; but at the period of which we speak he certainly had failed to discover how or why some chancres were followed by syphilis while others were not.

In our own days there has, we think, been no greater advance in pathology than that which has enabled us to explain definitely this apparently insuperable anomaly; for, by means of it treatment has become more certain and less empirical, and prognosis has been rendered something approaching to absolute. With special reference to this very important subject of prognosis, we would now pass on to consider whether we possess any definite symptom or symptoms in connection with the chancre, by means of which we can say in what cases the affection will remain a mere local one, and in what cases the constitution will become involved.

In the work of Jean de Vigo we find him directing particular attention to the induration of the chancre; and Marcellus Cumanus actually compares the induration of a chancre to a wart, and speaks of the sore itself as livid in tint and implanted on a hard base. Ambrose Paré obviously attached great importance to this same symptom of induration when he says, "In an ulcer of the penis, should the part be indurated, it will be an infallible sign that the patient is affected with syphilis." Petit has remarked, that those chancres which became indurated were the most constant cause of syphilis; and, in our own country, Benjamin Bell, John Hunter, and Mr Pearson have almost made the induration of a chancre an essential character by which the chancre may be distinguished from those other ulcerative affections of the genitals which had been recognised apparently in all ages, and to which they gave the name of diseases resembling syphilis and pseudo-syphilis. We say almost; for it is obvious, from even a very superficial glance at their writings, that they did admit within the category of true chancres, other sores than those which are followed by constitutional syphilis. It is certain, however, that they had formed no distinct idea of the doctrine of a plurality of specific causes. With them all chancres were liable to be followed by syphilis, or lues venerea, as they called the constitutional affection; and it was to the preventive powers of mercury that any immunity from its dread invasion was to be attributed.

Mr Carmichael, of Dublin, in 1815, first directed attention to certain different appearances in those chancres, and to certain forms of constitutional symptoms, between which he believed there was an intimate connection; so intimate, indeed, that he considered them to be related to each other as cause and effect. He proposed, in fact, to admit of a plurality of poisons, specifying no less than four distinct and different forms of sore resulting from their action upon the tissues of the body, and each accompanied by a corresponding type of constitutional affection.

The following was his classification in accordance with this view of the subject :—

Form of Sore.	Eruption on Skin.	Affection of Throat.	Other Affections.
1. Simple Ulcer.	Papular.	Increased Vascularity.	Rheumatic Pains. Iritis.
2. Ulcus Elevatum.	Pustular.	Dry and granular.	Distension of Joints. Nodes.
3. Phagedenic Ulcer.	Rupia.	Sloughing *Ulcer*.	Severe Pain in Joints. Nodes.
4. Indurated Chancre.	Scaly.	Excavated *Ulcer*.	Cephalic pains, glandular enlargements. Nodes.

But this somewhat clumsy classification and fanciful arrangement of symptoms, although it is even still adhered to in a more or less modified form by some surgeons of the Irish school, was admitted by practitioners generally not to be capable of anything like a rigid application, and was, accordingly, soon abandoned. In fact, this hypothetical multiplication of the chancre poison had been pretty well forgotten, when Ricord, in 1835, wrote as follows : "We most frequently meet with induration of the base of the chancre in those cases where secondary symptoms afterwards occur." Again, with greater precision, in 1858, we find him saying : "Indurated chancres are *usually* followed by secondary symptoms ; and the fact that this induration has occurred seems to indicate that the infecting principle has already affected the economy,"—a statement which, in 1840, he completes by asserting, as the result of his experience, that "when a chancre becomes indurated, it is infallibly accompanied by an indurated and non-suppurating engorgement of the neighbouring lymphatics." In 1850–51 these views had received such constant confirmation in practice, that he does not hesitate, in his Letters upon Syphilis, communicated to the *Union Medicale*, to affirm that "when a chancre becomes indurated, there is of necessity constitutional empoisonment ; this specific induration is a certain and absolute proof that the constitutional infection has already occurred." And, in another part of the same correspondence, we find him saying that "the variety of the diseased conditions following chancres depends not only upon the condition of the individual, but upon *a certain variety in the cause, and therefore in the virus*."

What, then, is the nature of the difference between the virus of the indurated chancre which is the source of syphilitic infection, and the chancre which is unattended by syphilis ?

Some, among whom we presume those who deal in "Syphilization" may be supposed to range themselves, have ingeniously attempted to prop up their practice by hazarding a theory, viz., that the non-indurated or simple non-infecting chancre is to the indurated infecting chancre what cow-pox is to small-pox. But

this charming analogy should, if true, imply that inoculation with the virus of the non-indurated chancre should protect the system against the indurated chancre and its constitutional sequelæ. Unfortunately, however, we do not find it so. The non-indurated chancre may apparently be reinoculated *ad infinitum*, but it proves no protection to the inoculation with the virus of the indurated chancre and its disastrous consequences.

Another view of the relation which these two forms of chancre bear to each other has been advanced by Dr Clerc. The simple non-infecting chancre, according to this gentleman, is merely a modification of the indurated or infecting chancre, resulting from the inoculation of the virus of the indurated chancre in an individual who has already suffered from an indurated chancre and constitutional syphilis. The more recent investigations of Ricord tend to overthrow this theory, and apparently indicate rather that the results of the inoculation in a virgin subject[1] of virus obtained from a chancre existing in a patient who has already suffered from syphilis, will depend entirely upon the nature of the chancre from which he derived his infection. From such, and various other analogous facts, Dr Bassereau, a pupil of Ricord's, has advanced a step further. He regards the virus of these two forms of chancre as perfectly distinct the one from the other, and each capable of transmission after its own kind. According to this view, there is no longer *one* chancre poison, with various inexplicable results, but a *duality* of virus and a duality of effect.

There is, I., The Simple, *Soft*, Non-infecting Chancre—The *Chancroid*, as Dr Clerc calls it—the chancre without syphilis, as it really is; and there is, II., The *Indurated*, The Infecting, The Hunterian Chancre, The *Chancre* proper, with its *inevitable* syphilitic infection, in which we recognise what at the commencement of this review we set out in search of—the alone source of the syphilitic virus, because always constant, and tallying in every item with our formulary of a true virus.

To the description and diagnostic recognition of these two forms of virus—the syphilitic and the chancroid—we now turn; for upon a right comprehension of their distinctive manifestations must depend our prognosis, and the treatment to be adopted in the early stage of these similar but essentially distinct diseases.

I. The Soft or Simple Chancre.—Its essential characters may be summed up in a few words.

The margins of the sore have a sharp, definite outline, giving it the aspect of having been cut out of the tissues with a punch. The surface is irregular, as if worm-eaten, and is of an ashy hue. The base is free from any specific induration, or, at most, it is accompanied by simple inflammatory thickening. The discharge is usu-

[1] By *virgin*, in such a collocation, the Continental syphilographers intend to designate those who have never been affected with syphilis.

ally copious, thin, and sanious, very irritating, containing the specific virus, and long maintaining its specific qualities. Therefore the soft chancre is rarely single, generally multiple, or, at least, rapidly multiplying itself by a series of spontaneous inoculations of contiguous parts; and, besides tending to extend its limits by the superficial invasion and destruction of surrounding parts, it is particularly liable to become affected with phagedena; and, under all circumstances, it is an excessively sensitive and painful sore.

The soft chancre produces either no effect upon the lymphatics, or, when it does affect them, the bubo may be, 1*st*, a simple sympathetic inflammatory engorgement, such as may result in the course of any inflamed wound or sore; or, 2*d*, it may be an acute monoglandular virulent affection, the result of specific absorption, which infallibly suppurates and furnishes an inoculable pus. Chancres with such characters are purely local affections; they are never followed by any constitutional infection; they irradiate their influence no further than the first gland in the neighbouring lymphatic chain.

Such being the case, we have practically, in the soft chancre, only to deal with a nasty, painful form of ulceration, which tends to extend its limits, 1*st*, by invading surrounding parts; 2*d*, by multiplying itself; 3*d*, by producing buboes; 4*th*, by becoming phagedenic; and the cause of all this local mischief is contained in the specific virus which reproduces itself in the discharge from the ulcerating surface. The whole secret, therefore, of the successful treatment of the soft chancre lies in the complete destruction of the specific ulcer, and its conversion into a common granulating sore. This we can effect most certainly and speedily by means of such cauterization as shall destroy not only the whole surface and margins of the sore, but the tissues around and underneath to a slight extent. For this purpose, the actual cautery, caustic potash, or soda, Vienna paste, chloride of zinc, nitric acid, the fluid pernitrate of mercury, the saffro-sulphuric caustic of M. Velpeau, or the carbo-sulphuric caustic of M. Ricord, will succeed equally well, if only they are thoroughly applied; while nitrate of silver, sulphate of copper, sulphate of zinc, and other favourite applications, can only act in a very modified degree as caustics, and are therefore not to be depended upon as means for summarily destroying the virulence of the sore. Where, however, the patient objects to the employment of powerful caustics, then solutions of these salts, suited in strength to the irritability of the part and person in which they are to be employed, will be found well adapted to act as alteratives in checking the copious irritating secretion from the sores, in limiting their extension, and in hastening cicatrization when it once commences. In acceding, however, to a patient's wishes in employing these modified measures, it must never be forgotten that, so long as the specific character of the sore remains, the virulent bubo may occur; and hence the propriety of early and complete destruction of its specificity before any virulent absorption has taken place. When,

however, a virulent bubo has commenced, no measures, whether derivative, soothing, stimulating, or revellent, can check its certain termination in suppuration; but in sluggish cases, where we may remain in doubt for some time as to its true character, such treatment may often be advisable. Even after suppuration has taken place, incision should be delayed until the purulent collection has made its way through the capsule of the gland, by which time the fluctuation will be distinct and the skin discoloured; then a free cracial incision should be made, so as to avoid the after-formation of sinuous tracks beneath the undermined skin; and at the end of a day or two, should the characters of the chancre appear in the incision which has been made, either caustic should be applied, so as to transform the specific ulcer into a simple sore, or nitrate of silver may be occasionally applied, and the whole surface of the ulcer should, from day to day, be carefully dressed with lint soaked in some astringent lotion, while pressure, by means of a pad and bandage, should be applied if there is any tendency to the continuance of chronic inflammatory swelling.

When phagedena attacks these sores, if they are limited in extent, cauterization, efficiently employed, will generally arrest its further progress, especially if ferruginous tonics are administered internally at the same time. Where, again, the ulcerating surfaces are very extensive, then certainly nothing acts so much like a charm in checking ulceration and promoting the progress of cicatrization as the oft-renewed application to the surface of a strong solution of tartarized iron, and the concomitant employment of large doses of the same salt internally, with the administration of stimulants and nutritious articles of food, of such kind and in such quantities as the patient can take most readily, and as the state of his pulse and system generally appears to indicate that he requires. Constitutional remedies to purify the blood, or to prevent the occurrence of constitutional infection, are quite uncalled for; mercurials can do no good, and, as experience shows, when carelessly administered they are a very common cause of the invasion of phagedena.

II. The Indurated Infecting Chancre—The Hunterian Chancre—Primary Syphilis.

When a well-marked example of the indurated chancre has been once seen, and its characters recognised, there is no difficulty in knowing it at once when it again presents itself. These characters, however, present different degrees of intensity, and may be obscured by various local and constitutional conditions to such an extent as sometimes to prevent, or at all events to delay, our arriving at an absolute diagnosis. To avoid such confusion in description, we will first describe the characters of a pattern or standard example of an indurated chancre, and then point out what are the modifying influences which come into operation, and what effects they produce upon the characters of the chancre.

The surface of the sore is smoother, of a less worm-eaten and

irregular appearance, than the soft chancre; it has a glossy appearance, as if it had been varnished; its colour is usually of a dark grey, varied with a russet or purplish tint.

The margins, of a uniformly rounded or oval form, are elevated above the centre of the sore; and their whitish hue, as contrasted with the comparatively dark colour of the surface, makes them appear to stand out in bold relief. There is no edge proper to the margins, for they descend with a gentle slope towards the surface of the ulcer, giving to it generally the aspect of having been gouged out of the tissues of the part.

The discharge is usually small in quantity, of a thick and gummy consistence, of a sero-sanguinolent character, but possessing no naked eye or microscopic specialism by means of which it could without fail be recognised. It speedily loses all specificity so far as inoculation in the individual who suffers from it is concerned, and hence indurated chancres are usually *solitary;* but, so long as the sore exists, the discharge rendered from it is apparently capable of inoculation, with specific effects, in virgin subjects.

Pain is by no means a characteristic of the indurated chancre; in fact, in many cases so little pain is experienced in any period of the existence of the sore, that its very existence is constantly overlooked by patients.

While *the indurated condition of the subjacent and surrounding parts constitutes the* specific characteristic of the infecting chancre, this is not usually or necessarily accompanied by any inflammatory blush such as would direct attention to its existence. Still, it is something quite *sui generis*, and more nearly resembles a thin and elastic bit of cartilage enclosed within the tissues of the part in which the sore is situated than any other normal tissue with which we are acquainted. This induration is confined to the immediate surface and margins of the sore, being, as John Hunter said, "circumscribed, not diffusing itself gradually and imperceptibly into surrounding parts, but terminating rather abruptly." Its size and extent, therefore, varies with the size of the sore; sometimes no larger than a barley pickle, it is at other times as large as a garden bean, but always distinct from the parts in which it is, as it were, implanted.

The infecting chancre usually becomes very speedily arrested in its extension. Where it is small in size, cicatrization rapidly ensues; where of large extent, cicatrization may sometimes be long delayed. The cicatrix which forms usually retains the pathognomonic induration of the sore, and is frequently characterized by a macular discoloration.

In the earlier stages of an indurated chancre, although the constitution may apparently be unaffected, before six months have elapsed some remote manifestation of the evolution of the syphilitic diathesis will infallibly point to the infection of the system.

Such are the characteristics of a model indurated infecting chancre—a Hunterian chancre, as in this country it is usually

called; but every infecting chancre has not these characters so well marked, and to the varieties which occur we would now wish to direct attention.

1*st. Varieties with reference to the Characters of the Sore.*—The indurated chancre is usually speedily limited; but at times, like the soft chancre, it may be attacked by phagedena. This is, however, a rare occurrence; but its occasional appearance, as a complication of the indurated chancre, serves to explain the importance which Mr Carmichael attached to the phagedenic chancre as prognostic of the very worst form of tertiary syphilis, but which must, of course, remain quite inexplicable to those who consider phagedena as the prerogative of the soft chancre, or, in their language of experience, regard the occurrence of phagedena as affording a certain immunity against any constitutional infection.

This fact of the occurrence of phagedena as a complication of the indurated chancre has a further important practical bearing. The older surgeons remarked, that, while the administration of mercurials in most cases of phagedenic chancre was productive of the most disastrous results, there were cases; on the other hand, in which the careful employment of mercury tended to arrest the unhealthy action and improve the characters of the sore. These exceptional, and to them inexplicable cases, we now recognise as examples of the phagedenic indurated chancre, and believe that the remedial agency was due to the effect produced upon the induration, not the phagedenism, of the sore.

2*d. Varieties with reference to the Induration of the Sore.*—Well-marked examples of the indurated chancre are very rare; so much so, that we have known a surgeon of very extensive hospital practice speak of having seen, in the course of his experience, only two or three real Hunterian chancres. Now, if this is the case, and if constitutional syphilis is very common, and if the indurated chancre is the inevitable preliminary of syphilis, it is perfectly obvious that there must be some variety in this symptom of induration which renders its recognition less simple than appeared at first sight. We find, accordingly, that it varies with the tissues in which the sore is implanted; and so very marked is this, in some instances, that some surgeons (such as Mr Holmes Coote) have attributed the induration of the chancre, not to its specific character, but simply to the laxness of the tissue in which it is situated. While, however, experience cannot support such a doctrine, there can be no doubt that wherever the tissues are loose, and possess a large number of lymphatic vessels, then the induration of a chancre is always most developed. This is well seen in chancres situated in the sulcus, behind the glans penis, on the prepuce, on the lips, etc., where the ulcer may be sometimes seen so raised upon its indurated base as to constitute a positive *ulcus elevatum*. Again, in some other situations, such as the *caruncula myrtiformes* on the mucous membrane of the vagina, and within the anus, the induration is so slight, that

except to the *tactus eruditus* of an experienced practitioner, if this character is alone referred to, the essential nature of the sore may easily enough be overlooked.

But the induration also varies with the period at which we examine the sore to test its presence. Induration is always an early symptom of an infecting chancre; if a chancre is to be a source of infection, the induration will appear about the third, and rarely later than the seventh day after the commencement of the sore; but having once appeared, unless developed in a very characteristic degree, it may be evanescent, often, as Ricord says, "disappearing before the work of reparation is finished, and before cicatrization is complete."

When the induration of an infecting chancre is but slightly developed, it has received from Ricord the title of "*Induration en surface*," *or* "*parchiminée*." Here we have no longer the characteristic cup-like mass of induration; but the sensation, when the base of the sore is gently manipulated by skilful and experienced fingers, is that of a bit of parchment implanted beneath the sore.

The diagnosis of the specific induration of the infecting chancre, therefore, is beset with difficulties; and as further difficulties may arise from the simulation of the indurated chancre by the artificial "*hardening*" of the textures around a soft chancre, it is incumbent on us to look for some other symptom which may assist us in arriving at something like precision in our diagnosis and prognosis.

We have seen how the simple gonorrhœa frequently was accompanied by the sympathetic inflammatory bubo, which rarely suppurates; how the soft chancre had its virulent bubo, which always suppurates; and we have now to study the bubo symptomatic of the indurated chancre. "Nihil in inguine quod non prius fuit in pene!" says M. Diday, and certainly here we find in the bubo of the indurated chancre a counterpart of the induration of the sore itself.

This bubo symptomatic of the indurated chancre is a multiple indurated adenopathy of the neighbouring chain of lymphatics interposed between the part affected and the general lymphatic system. Between the enlarged glands and the sore, we can *usually* trace the lymphatic vessels enlarged, knotted, but painless. The gland, into which these vessels open, is usually the most enlarged; the others vary in size in different cases, but their special characteristic is their induration. This induration, which communicates to the fingers the same sensation of cartilaginous hardness which we saw existed in the base of the chancre, is unaccompanied by any inflammatory tension, fusion of surrounding parts, or pain; and although the indurated enlargement may continue for an indefinitely long period, it has no tendency *as such* to undergo suppuration. No doubt suppuration may occur in these specifically enlarged glands, as in any other lymphatic chain, from the existence of any common cause of simple irritation, or from a soft chancre occurring as a complication, a virulent bubo may be produced; but this con-

stitutes no true exception to the constant indolent character of the bubo appertaining to the indurated chancre; for where suppuration does occur, it is not the result of the specific character of the sore, but produced by either a simple inflammatory or a virulent complication. A further peculiar feature of the indurated bubo is, that it is bi-lateral—that is to say, when the indurated sore exists in a central situation, such as the penis, the (inguinal) glands on both sides are characteristically enlarged.

The indurated bubo, furthermore, is very persistent; dating its commencement from the period at which the induration of the sore is first observed, it remains well defined for months, nay, frequently for years after the sore has healed. Such a constant, well-marked, persistent accompaniment of the indurated chancre is of the very greatest importance in the diagnosis of venereal diseases. It serves infallibly to indicate the true character of a sore; it serves with unfailing certainty to indicate the source of a syphilitic eruption when all trace of the sore has disappeared; and by means of it you may detect the existence of a chancre occupying an unusual locality; in fact, the "indurated multiple glandular pleiad," with its "*index*" gland, may be invoked as a witness with the greatest certainty, and depended on far more implicitly than any statements made by a patient; and although the exact site of the chancre which produced it may remain a mystery, which you either do not choose or fail in the circumstances to expiscate, you may safely act upon the indication which its existence affords in forming a prognosis of the likely progress of the case, and employ a course of treatment appropriate to the indurated chancre and its consequences.

To the prognosis and treatment of the indurated chancre we would now direct the reader's attention. The soft chancre, we saw, was a local affection, bounded in its influence by the first lymphatic gland in the neighbouring chain. In the indurated chancre the ulcer is comparatively a trifle; the real disease is the infection of the constitution, the syphilitic diathesis, which it has served to introduce. We saw that Ambrose Paré regarded the induration of the chancre as an indication of the inevitable syphilitic infection; but modern investigation tends to prove that the induration of the sore, as well as the induration of the bubo, is not merely the first step towards the infection of the system, but is in reality the reaction upon the part of the effect which has already been produced in the system. The indurated chancre is, therefore, rightly enough called primary syphilis, for it is the first outward manifestation of that constitutional infection which is fully developed in the induration, but when manifested in cutaneous eruptions constitutes the confirmed pox, as our forefathers would have called it—the constitutional syphilis of our own days.

This constitutional disease, so commencing, is most regular in its further development. At its outset, a very obvious condition of

chloro-anæmia manifests itself, accompanied by a sense of lassitude, with neuralgic or rheumatic pains, cervical glandular enlargement, falling out of the hair, and certain eruptive manifestations, observable both upon the cutaneous and upon accessible mucous surface, and in the involvement of certain fibrous tissues.

These are the symptoms popularly called *secondaries;* and although only affecting the surface of the body, manifestly indicate the empoisonment of the whole system. Such symptoms are *certain* to make their appearance within the first six months after the occurrence of an infecting chancre; and no treatment can prevent this evolution, though it may delay or confuse their regularity, and modify their severity. At a somewhat later period, symptoms commonly called *tertiary* make their appearance. They occur in the deeper seated tissues of the body, such as the cellular tissue, the bones, joints, and in the textures of organs. These symptoms rarely occur within the first six months; but, on the other hand, they continue to evolve and repeat themselves for an almost unlimited period. They are of a very much more serious nature, both as regards the part and system at large, than those we have just specified as secondary, and are so completely distinct as almost to constitute, as Hunter says, a different disease.

The primary disease, the indurated chancre, is the only stage of syphilis which has been proved to be certainly contagious. Some have asseverated and adduced reputed facts in proof of the communicability of some of the forms of secondary eruption; and some have even gone so far as to assert that the blood of syphilitic patients, when brought into intimate contact with the textures of the body, through the medium of a wound, abrasion, or ulcerated surface, is capable of inducing secondary constitutional affections. To avoid the risk of fallacy in investigations connected with this subject is almost impossible; for as syphilitic inoculations are devoid of results in persons already suffering from syphilis, the majority of facts which have been collected are derived from so-called physiological inoculations with the secretions or blood of individuals supposed to be suffering from secondary symptoms alone. Results, however, deduced from such facts cannot be regarded as unexceptionable; for, very possibly, the existence of an indurated sore, or some source of contamination other than the presumed one, but which has been overlooked, may have interfered to vitiate their certainty. It may be observed in those cases, again, where absolutely positive results have been believed to be attained after certain very *quis quis* attempts to induce inoculation with the secretions of supposed secondary affections introduced into the tissues of "virgin subjects," that there is a very great vagueness in the descriptions given of the different stages of the process by which the material for inoculation had been obtained, of the mode in which it had been employed, and of its immediate effects produced upon the part where it had been introduced; and as we find, besides, that these

asserted facts are flatly contradicted by other similar experimental researches made upon their own persons by medical men of known integrity.[1] We are compelled, at the present stage of the question, to recur to the doctrine of Ricord, that we have as yet no evidence that secondary or tertiary syphilis has ever proved inoculable, or given rise to the development of secondary or tertiary symptoms.

The secondary form of the disease is, however, communicable from parent to child, and from the male parent to the female, through the medium of the fœtus. Such hereditary transmission is by no means, however, constant or inevitable, and becomes less and less likely as the diathesis becomes older. The tertiary symptoms, again, are not apparently communicable as such, even by hereditary transmission. It seems, however, very probable that, in some cases, children of a very scrofulous habit of body, owe this in no small degree to the fact, that one or other parent, or both, have been subjects of the syphilitic diathesis.

While the diathesis becomes, as it were, exhausted in its external manifestations, there is no well-authenticated example of its complete extinction. This permanence of the diathesis is evinced by the non-inoculability of the indurated chancre in persons who have once suffered from syphilis. In them the virus usually produces no effect whatever, or, at most, produces a chancre in which the characteristic induration is wholly wanting.

From the occasional production of sores, with all the characters of apparently simple soft chancres, by the fresh inoculation in a syphilitic patient of the virus of the indurated chancre, some have supposed that the syphilitic virus, by this mode of transmission, gradually loses its specific qualities, becoming exhausted as it were, and thus, after repeated transmission, no longer capable of infecting the economy, but producing merely a local disease. Some have accordingly attributed the soft chancre to this source, considering it as a mere variety of the infecting chancre; and, from analogy, attempted to explain the very modified symptoms of the syphilis of the present day, as compared with the disease as described by authors of the fifteenth century. Indeed, this supposed exhaustion of the potency of the syphilitic virus has been employed as an argument in support of the practice of artificial syphilitic inoculation, as a means of exterminating the syphilitic virus generally; and it has actually been proposed that, as we vaccinate children to save them from variola, we should also *syphilize* every infant that comes into the world, in order to modify the type of syphilis—in other words, that the whole world should be poxed, that the pox may be arrested. Even admitting, for the sake of argument, that the practical development of this proposal could afford any advantage (to the immediately succeeding generation, it most certainly could only do an incalculable amount of mischief), the whole theo-

[1] *e.g.*, Cullerier, Fournier, Sarrhos, Rattier, and Lindmann.

retical superstructure is founded upon two false assumptions :—1*st*, that the soft chancre is essentially the same with the indurated, being merely a modification of it; and, 2*d*, that the indurated chancre is absolutely incapable of effecting an inoculation in (*a*) a patient who has already been "*saturated*" with the virus of the soft chancre, or, according to others, (*b*) who has already been the subject of a true syphilitic infection.

The first statement, and the first part of the second, our readers must already recognise as untenable; and as to the second part of the second statement, although so far true, it is not definitively so. For while it is indubitable that the indurated chancre cannot appear as such in an individual who has once suffered from syphilis, and that if any result whatever is obtained, in him it is only a chancre with a soft base, it is equally certain, that the pus from such a chancre inoculated in an individual who has never previously suffered from syphilis, again reproduces the chancre with the indurated base, with its characteristic bubo, and with its constitutional symptoms. The chancre, then, with a soft base, which occurs in a syphilitic patient, may be either essentially a soft non-infecting chancre, derived from a similar source, and transmissible as such, or it may be the temporary nidus of the virus of the infecting chancre, derived from such, and transmitted as such,—only remarkable in this, that it wants its specific characteristics; and these characteristics, viz., induration of the base, and the indurated multiple bubo, are only absent, because, as we have seen, they constitute a part of the syphilitic diathesis, and, unless a diathesis becomes extinguished, its symptoms cannot be reproduced in the same individual.

In treating the indurated chancre, then, it is a diathesis, not a mere local disease, with which we have to deal. The local disease is comparatively a trivial, painless, limited affair, and will get well almost of its own accord, if only we attend to the infected state of the constitution. In the soft chancre, we said that the whole disease might be destroyed by the efficient cauterization of the sore, and some have supposed that by a sufficiently early destruction of an indurated chancre, the irradiation of the poison throughout the economy and the establishment of the diathesis may be prevented. When the specific induration and the pathognomonic bubo have appeared, as they are symptomatic of the constitutional intoxication, it is, of course, too late to employ ectrotic measures—the period is past when we can "punch out the primary," when we can "nip the syphilis in the bud," as Ricord has expressed it. But before this infection has occurred, in that uncertain period which intervenes between the appearance of the sore and the first evidence of its having produced constitutional effects, it may reasonably be asked, Is there no period in which the employment of cauterization will destroy the focus from which it is about to irradiate its baneful influence? Ricord has replied in the affirmative; and, from his extended experience, has taught for many years, that infection has

never been known to follow upon chancres which have been effectually cauterized within the first four days from their appearance. Professor Sigmund of Vienna, although he similarly limits the period of certainty in the destruction of the chancre, and with it all further effects, to the fourth day, believes that the fifth day is not too late to prevent absorption, and even practises ectrosis much later. It must of course be remarked, that during this period, as every pathognomonic symptom is absent, the sore, to all appearance, is a mere soft chancre; and this fact merely renders the general rule, already laid down, of efficiently destroying every soft chancre, only more obligatory than it seemed before. At the same time, more recent experience tends to throw doubt upon the absolute certainty of the results obtained from protective cautcrization, even when practised at the earliest possible period. Dr A. Dron,[1]—pointing to the analogies of the virus of vaccinia of glanders and farcy, and comparing them with the experiences of M. Diday and M. Langlebert in the ineffective destruction of infecting chancres, before either induration of the sore or specific adenopathy had appeared, although practised within hours, instead of days, from the appearance of the sores,—has concluded, that as soon as the chancre has made its appearance, abortive measures are too late; and that the constitutional infection will inevitably occur. Still, for other reasons, he thinks the rule imperative, and recommends the use of caustic at this stage:—1*st*, Because we are as yet uncertain whether the chancre will prove indurated (*i.e.*, infecting), or soft and non-infecting; and, therefore, lest it should prove to be the latter, cauterization is to be employed. 2*d*, Although it cannot prevent the patient from suffering from syphilis, by its employment we can prevent the transmission of the disease to another individual.

Should the patient, however, object to the use of caustics (as he very naturally may, when we can promise him by their use no certain immunity from the constitutional disease which he dreads above everything), then any simple dressing of a slightly astringent and stimulating kind will suffice in most cases to provide for the speedy cicatrization of the sore. Should it again prove tedious from the amount of induration deposit, either blistering or the occasional application of the nitrate of silver will usually effect its healing. At times, however, such sores, when of large size, resist all local treatment; but as soon as the system is brought under the influence of constitutional remedies, the tawny varnished surface becomes covered with healthy granulations, the thick white ring of induration smooths down to the same level with the surface of the sore, and contraction of the cicatricial pellicle rapidly ensues.

But our attention must not be limited to the sore alone. We have a diathesis to treat. Its evolution is impending. Our object

[1] In his paper upon the "Destruction of Chancres," in the *Annuaire de la Syphilis, etc.*

should be to ward it off—to mitigate, if we cannot altogether prevent, its development. Are there any means, then, at our disposal by which we can fulfil such indications? The older writers upon venereal diseases had no difficulty in replying at once affirmatively to this all-important question. They believed in a universal venereal virus, and mercury was its constant antidote. Had a patient a sore? Mercury was the agent by which it could be healed! Were constitutional symptoms apprehended? Mercury was a sure preventive! Did they, nevertheless, appear? Mercury sufficient had not been given! more mercury still must be administered! Had a patient the venereal? Well, run him up with mercury from morning to night, till his face blanched, and his tongue was swollen, and his teeth were loose, and the saliva ran in pints from his slavering lips. Such was the reign of mercury! Mercury triumphant! Mercury and the mercurialists run mad! Those were the days when there were lodging-houses kept for the use of young gentlemen who required to go through a course of mercury, as it was called; for it was seldom that a young man could remain with his friends, and undergo the severe discipline to which the surgeons of those days thought it necessary to subject him. But while mercury was deemed essential in all cases of so-called syphilis in this and other countries in Europe, sudorific decoctions and diet drinks were found in warmer and more genial climates to obtain quite as great a success as the mercurial treatment in the supposed prevention and cure of the constitutional symptoms. Such success very naturally led to the adoption of a similar plan of treatment by professional men in Europe; and, so far as the supposed prevention of the constitutional symptoms was concerned, it was found that pretty nearly the same results attended the use of "the decoction of the woods" as was obtained by the employment of mercury; while, under the non-mercurial treatment, phagedenic ulceration, caries, and necrosis were very much less common accompaniments of the advanced stages of the disease. Since that period, however, various waves of fashion in the treatment of venereal diseases have passed over the face of the world; and while one remedy and then another has gained a great reputation, it is a remarkable fact that there are few men of practical experience, whatever their theoretical leanings, who will not admit that there are many cases of syphilis which resist all *non*-mercurial treatment.

In considering the advantages of a mercurial or non-mercurial treatment, one great source of fallacy will be removed, if the doctrines of the essentially local character of some sores, and the inevitable constitutional irradiation of the poison producing others, is admitted. It will then be obvious that all comparative estimates of the number of cases of chancres in which constitutional symptoms made their appearance, with and without the employment of mercury, are simply coincidences, and must have been due, not to the treatment, but to the original essential characters of the sores. The

dogmatic statement of the non-mercurialists, that "all kinds of sores, or primary symptoms of syphilis, may be cured without mercury," although readily assented to, so far as the sore itself is concerned, in the case of most indurated chancres, and admitted as perfectly correct in those sores which are soft chancres, must be carefully understood to have no reference to the constitutional disease, which is the inevitable accompaniment of the indurated form of sore. But when they advance a step further, and tell us, "there are good grounds for believing that, in the majority of cases, where secondary symptoms have occurred, when the primary symptoms have been treated with mercury, that the secondary symptoms have been more severe and more intractable than where mercury had not been used for the primary sore," we demur to the accuracy of this deduction, and, admitting their facts to be correct, attribute these results to one of two things: 1*st*, the poisonous extent to which the remedy must have been given; and 2*d*, to their having, in their own practice, restricted the employment of mercurials to the very worst cases of indurated sore, which, as they were obstinate in their commencement, might be expected to prove equally serious in their further manifestation.

While, then, we readily admit that the indiscriminate administration of mercury in every case of chancre which comes under our notice, and more especially if carried to the well-nigh poisonous extent of profuse and continued salivation, can only be injurious, and give to any comparative estimate a great preponderance in favour of the non-mercurial treatment, we do claim for the judicious and careful administration of mercurials in the treatment of the syphilitic diathesis results which, in cold climates at all events, cannot be attained by any other mode of treatment. We do not claim for mercury any specific influence by means of which it follows out the syphilitic virus, and neutralizes it; nor do we maintain that, in order completely to extinguish the diathesis, it only requires that a certain indefinite quantity of mercury must be given. We merely claim for mercury an eliminative power, by means of which a rapid metamorphosis of tissue is effected, and the symptoms of syphilis are hurried through their regular evolution by the elimination of those modifications of tissue which the introduction of the syphilitic virus has produced. So long, then, as any modified tissue, constituting a nucleus or centre of infection, exists unmodified or uneliminated by the restoration of the tissue to its original typical condition, a fresh outbreak of the constitutional manifestation may occur. So long, therefore, as we are unable to judge of the extent or degree of modification of tissue produced by the syphilitic virus, it must of course remain problematical how much of the eliminating material should be administered. In estimating practically the period during which mercury should be given, Ricord recommends that mercurials in daily doses should be taken for six months. Dupuytren, again, gave mercury so long as any secondary constitutional symptoms appeared,

and then continued its use for as long a period thereafter. Some practitioners recommend its continuance for a few weeks, some for a few days only, after *every symptom* of the disease has disappeared. This, however, is a very doubtful period; for it depends entirely upon what is meant by *every* symptom;—some intending by that term merely to indicate the cutaneous manifestations and the induration of the cicatrix of the original sore; others, again, more reasonably including the indurated adenopathy as constituting a part of the disease.

However much doubt may exist as to the length of time mercurials should be given, there is at the present day but one opinion as to the effect which the drug should he permitted to produce when given. Whenever the gentlest possible physiological effect of the mercurial has occurred, then the full therapeutic effect has been attained, and anything further must prove injurious. Whenever the gums become tender, our eliminative ultimatum has been reached; and all we can hope to attain by the employment of the remedy will be gained by keeping up this condition for such a period of time as it seems to act, by improving the general health of the patient. Should the mercurial treatment tend to affect the mouth too readily, or actually to induce salivation before we can check its administration, the chlorate of potash, given internally, will be found admirably suited to check its poisonous and irritative effects. And this fact is now so generally admitted, that, by many surgeons, mercurials are never administered with the view of affecting the system at large, without at the same time giving the chlorate of potash to act as a corrigent, and so to prevent salivation, which it is generally recognised as well suited to cure.

It is with some persons a disputed point, at what period in the progress of the syphilitic infection the use of mercury should be commenced. Some, such as Ricord and most English practitioners, give it at the very outset,—so soon, in fact, as the characters of the indurated infecting chancre have appeared; while others reserve its employment against the first manifestation of a cutaneous eruption, or even restrict its use to the period of the squamous efflorescence of lepra and psoriasis. If any doubt exists in the diagnosis of the true character of the sore, by all means defer all specific treatment. If the disease turn out to be a soft chancre, the use of mercury might have been quite injurious,—at all events it is unnecessary; and by giving it, you prevent anything like absolute certainty as to the true nature of the sore and its consequences; for the undoubted effect of the remedy is to disturb, and even to prevent the natural evolution of the external manifestation of the diathesis. But where the case is an indubitable one of an indurated chancre, then the mercurial treatment should be commenced without any delay, with the view of preventing the outward manifestations of the diathesis. Some have feared that all such treatment, calculated as we see it is to arrest the external evolution of the diathesis, may, like

the wolf shut up in the sheepfold, do untold mischief, while there is a semblance of outward security. Such speculations, however, have no foundation in anything but the superstition of a vague and antiquated humoral pathology.

Some practitioners and patients, however, have a dread of the use of mercury in the treatment of syphilis which might be said almost to amount to a monomania. In some cases, this is traceable to the prejudices of early education and limited practical experience; in others, to popular prejudice, or a melancholy personal experience of mercurial poisoning on some previous occasion. In such instances, although we believe that mercury, properly administered, is the most safe and certain method of arresting the manifestation of syphilis and preventing its hereditary transmission, we have no hesitation, where prejudice exists, in complying with the wishes of the patient, and giving what we believe to be not so good, but still undoubtedly useful, in effecting the expulsion of the disease from the economy,—such as the hydriodate of potash or soda, guiacum, mezercon, sarsaparilla, diuretics and sudorifics, accompanied with warm bathing, the vapour bath, a regulated diet, moderate exercise, and the avoidance of exposure, or of any cause likely to determine a fresh accession of constitutional symptoms. There are cases, too, where in any circumstances a tonic treatment is quite essential; as, for example, in those rare cases where the indurated sore is phagedenic, when tartarized iron will be found invaluable; or, again, when the symptoms of chloro-anæmia are accompanied with great lassitude and debility, then, besides the iron, quinine and stimulants must be employed. In very scrofulous cases, too, where mercurials will generally be found to be badly borne; then iodide of iron and arsenic, zinc, and cod-liver oil should be rather confided in. We must remember, too, as the disease gets older in the system, mercury becomes less useful than at first, and that the therapeutic effects of mercury are most markedly apparent in the early secondary symptoms; when these merge into the tertiary stage of the disease, then mercury either produces no effect whatever, or, if it is pushed, becomes an undoubted source of incalculable injury, hurrying on the destruction of the structurally altered textures by inducing suppuration, ulceration, and sloughing. It is in this, the tertiary stage of syphilis, that iodine in the form of hydriodate of potash comes to our help, and acts like magic both in improving the general health and in restoring the diseased tissues to their normal condition. Various vegetable tonics may render this more agreeable in its administration, and less irritating in large doses (which should always be employed); but there is nothing so specifically advantageous in the selection of sarsaparilla as to make it stand so high, as it undoubtedly does, in popular esteem. In its combination with iron, iodine will be found better borne in children, and more rapid in its good effects in anæmic adults. At one time fears were prevalent that the continued employment of iodine would give

rise to serious results, such as poisonous iodism and atrophy of the testicles. Iodism certainly is readily induced in many cases where there is no tertiary syphilitic taint; but in tertiary syphilis, iodine is well borne both by the stomach and the system in very large doses without producing discomfort or doing any injury. The supposed effect of iodine in producing atrophy of the testicles, is founded upon the fact, that in cases of syphilitic sarcocele of long standing, when the diseased condition is removed under the use of iodine, the organ is frequently found to become completely atrophied, and, on dissection, little of the tubular structure remains. But this atrophic state is due not to the iodine, but to the pressure of the tertiary syphilitic tubercular deposit. Of course, therefore, when the deposit is absorbed, the condition of atrophy, which had been previously disguised, is revealed.

The local treatment of tertiary syphilis consists, generally, in the use of blisters; in the application of stimulating lotions and applications to open surfaces, and occasionally, where sloughing cellular-tissue sores resist these other means of stimulation, in the application of potassa fusa, to destroy the enfeebled textures involved in the syphilitic tubercular deposit. Such, then, is a very meagre and brief sketch of the most approved principles upon which the treatment of syphilis should be conducted. One word further remains to be said with reference to a novel method, which has been much spoken of as a means of effecting the elimination of the syphilitic diathesis. We allude to curative syphilization. This method of treatment has, so far as we can see, no theoretical basis upon which it can stand; it has only the results of alleged success in its favour. This so-called remedy consists in the inoculation of chancres every third day upon the sides of the patient's trunk, until no further inoculation can be effected. Fresh virus is then obtained, and the inoculations proceeded with. When the sides become proof against any further inoculation, then the skin of the thighs is subjected to the same process, until they too, in turn, become proof against the influences of the virus. The patient is then supposed to be completely syphilized. (?) And it is said that the induration of the original chancre disappears during this process, buboes are beneficially affected, secondary eruptions and iritis are cured, and that even tertiary affections, such as periostitis and necrosis, get well under its magic influence. This so-called cure has been obtained by a period of continuous inoculation, extending, in Dr Sperino's published experience, over a period varying in different cases from one to seventeen months; and the majority of cases so cured were under treatment for the longest period. Under any circumstances, such a nasty, filthy mode of alleged cure is not likely to find much favour in this country. But, looking at it speculatively, it becomes at once obvious that this term of syphilization is a palpable misnomer, as it is no syphilization at all. *That*, from what we have seen, the patient acquired when he contracted

the indurated chancre; and having once become the subject of the syphilitic diathesis, he has acquired an immunity against all further repetition of the diathesis. If the matter of an indurated chancre is inoculated upon him, it usually produces no effect whatever; or, if it does, the sore is a mere soft-based sore, which produces no effects whatever, but cicatrizes rapidly. If, then, Dr Sperino, M. Auzias Turenne, and Professor Boeck are correct in their statements, that this inoculation is so easily practised, it must be with the matter of soft, non-infecting chancres that they have inoculated their patients: they have *chancerized* their patients, if they please, but not *syphilized* them! And such, in fact, seems to be the case; for the examples of inoculation given by Professor Boeck of Christiania are obviously produced by the virus of the simple, soft chancre, and not by the indurated, which, as we have seen, is the only possible source of syphilis. These so-called cures, then, of this all-prevalent diathesis are, after all, effected in reality by a mere local irritation, attended by a long-continued suppuration spread over some extent of surface; and an interesting fact, which bears out the truth of this explanation, is, that Professor Faye, also of Christiania, finds that repeated inoculations with tartarized antimony, or the introduction of a seton,—and others, that repeated blisters, produce equally good results, and in as short a space of time, as the so-called process of syphilization.

Such being the case, we must resort again to what we have already said, that there is no specific treatment which is calculated to *cure* syphilis. Various methods may serve to effect its elimination; and in our choice of these, we must be regulated by the constitution and circumstances of the patient, the stage of the disease, and the generally admitted fact, that ever since its commencement, mercurials have been found, when properly employed, to effect this elimination more speedily and more persistently than any other plan of treatment which for a time has obtained a great reputation.

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